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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,917	03/22/2004	Robert Tod Dimpsey	AUS920040063US1	3885
35525 7590 04/20/2007 IBM CORP (YA) C/O YEE & ASSOCIATES PC P.O. BOX 802333 DALLAS, TX 75380			EXAMINER WANG, BEN C	
			ART UNIT 2192	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			04/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/806,917

Applicant(s)

DIMPSEY ET AL.

Examiner

Ben C. Wang

Art Unit

2192

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :03/29/2007, 11/10/2006, 10/05/2006, 08/29/2006, 05/31/2006, 04/25/2006, 03/27/2006, 06/30/2005.

DETAILED ACTION

1. Claims 1-26 are pending in this application and presented for examination

Specification Objections

2. The specification is objected to because the following informalities:
 - "Windows XP", "Sun Microsystems", "IA-64", and "Intel", cited in P. 14; 2nd Para., Lines 5-6, 10; P. 22, 2nd Para., Lines 17-18, are registered trademarks
 - "instruction slot 602, instruction 604", cited in P. 28, 3rd Para., Line 4, should be corrected as "instruction slot 602, instruction slot 604"
 - unfilled data for "serial number" and "filed on", cited in pp. 47-48, should be updated accordingly
 - "In step 2302", if metadata for prefetch", cited in P. 56, 3rd Para., Line 3, should be corrected as "In step 2402", if metadata for prefetch",
 - "into a load store unit, such as load store unit 228 in Figure 2", cited in P. 57, 2nd Para., Lines 6-7, should be corrected as "into a load/store unit, such as load/store unit 228 in Figure 2"
 - "computer readable media", cited in P. 59, Line 10. Examiner suggests to use "computer recordable storage media" instead

Appropriate correction is required.

Claim Rejections – 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 21-26 are rejected under 35 U.S.C 101 because the claims are directed to non-statutory subject matter.

5. In claim 21, a “computer program product in a computer readable medium” to include recordable-type media,..., and transmission-type media, cited on P. 59, Lines 10-16, in the specifications; the claim is directed to a computer program product encoding a computer program. However, Applicant defines “computer program product in a computer readable medium” to include “a computer data signal embodied in a carrier wave”. Signals and carrier waves do not fall within any class of statutory subject matter, and thus the claim is not limited to statutory subject matter. Please see Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (1300 OG 142), Annex IV, Section (C) for details.

6. As to claims 22-26, they are merely further recited as the computer program product per se, thus, do not cure the deficiency of base claim 21, and also rejected under 35 U.S.C. 101 as set forth above.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-2, 4-10, 11-12, 14-20, 21-22 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, 10-17, and 19-24 of copending Application No. 10/808,716.

Although the conflicting claims are not identical, they are not patentably distinct from each other because limitations in one claim can obviously be applicable in the corresponding claim.

The following table shows few claims to demonstrate the reason for rejection (based on original claims):

Instance Application No. 10/806,917

Claim 1: a method in a data processing system for presenting coverage data relating to data access occurring during execution of code, the method comprising:

- obtaining the coverage data containing data access indicators associated with memory location;
- identifying the data access indicators that have been set by a processor in the data processing system in response to access of memory locations during execution of the code by the processor to form set data access indicators, wherein each set instruction access indicator is associated with a portion of the memory locations allocated for the code; and
- generating a presentation for coverage data, wherein the set data access indicators are identified in

Copending Application No. 10/808,716

Claim 1: a method in a data processing system for presenting coverage data for code, the method comprising:

- obtaining the coverage data containing instruction access indicators associated with the code;
- identifying particular instruction access indicators that have been set by a processor in the data processing system in response to execution of the code by the processor to form set instruction access indicators, wherein each set instruction access indicator is associated with a portion of the code; and
- generating a presentation for the coverage data, wherein the set instruction access indicators are

the presentation.

identified in the presentation.

Claim 2: the method of claim 1 further comprising:

- identifying unset data access indicators that have remained unset during execution of the code by the processor, wherein the unset data access indicators are identified in the presentation

Claim 2: the method of claim 1 further comprising:

- identifying unset instruction access indicators that have remained unset during the execution of the code by the processor; wherein the unset instruction access indicators are identified in the presentation

Claim 4: the method of claim 2, wherein the set data access indicators are identified in the presentation using a first color and wherein the unset instruction access indicators are identified in the presentation using a second color.

Claim 3: the method of claim 2, wherein the set instruction access indicators are identified in the presentation using a first color and wherein the unset instruction access indicators are identified in the presentation using a second color.

Claim 5: the method of claim 2, wherein the set data access indicators are identified in the presentation using a graphical indicator and wherein the unset

Claim 4: the method of claim 2, wherein the set instruction access indicators are identified in the presentation using a graphical indicator and wherein the unset

instruction access indicator are identified
in the presentation using the graphical
indicator.

instruction access indicators are identified
in the presentation using the graphical
indicator.

Although, the conflicting claims are not identical, they are not patentably distinct from each other because both applications use steps that are clearly similar. For instance, Claim 1 of the instant applications states, "obtaining the coverage data containing data access indicators associated with memory locations", claim 1 of the copending application 10/808,716 recites, "obtaining the coverage data containing instruction access indicators associated with the code". In effect both state the same thing. They are both getting coverage data that containing indicators associated with instructions or memory location where the instructions are located.

This is provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented

Claim Rejections – 35 USC § 102(e)

9. The following is quotation of 35 U.S.C. 102(e) which form the basis for all obviousness rejections set forth in this office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 6-13, 16-23, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by DeWitt JR. et al. (Pub. No. US 2005/0071817 A1) (hereinafter 'DeWitt')

11. **As to claim 1**, DeWitt discloses a method in a data processing system for presenting coverage data relating to data access occurring during execution of code, the method comprising: obtaining the coverage data containing data access indicators associated with memory locations (Fig. 4, element 404 – performance indicator shadow cache; [0081] – processor uses the performance indicators to determine how the related data access .. are to be counted); identifying the data access indicators that have been set by a processor in the data processing system in response to access of the memory locations during execution of the code by the processor to form set data access indicators, wherein each set instruction access indicator is associated with a portion of the memory locations allocated for the code (Fig. 9, steps 900 – identify a request to access a memory location, 902 – performance indicator associated with the memory location; Fig. 15, element 1512 - memory location; [0123], Lines 8-11 – meta data take the form of performance indicators that tell processor ... data accesses to memory location; [0193]); and generating a presentation for coverage data, wherein the set data access indicators are identified in the presentation (Fig. 9; [0096], Lines 1-5 – a process for generating an interrupt in response to an access of a memory location associated with a performance indicator ..; [0097]).

12. **As to claim 11**, DeWitt discloses a data processing system for presenting coverage data relating to data access occurring during execution of code, the data processing system comprising:

obtaining means for obtaining the coverage data containing data access indicators associated with memory locations (Fig. 4, element 404 – performance indicator shadow cache; [0081] – processor uses the performance indicators to determine how the related data access .. are to be counted); identifying means for identifying the data access indicators that have been set by a processor in the data processing system in response to access of the memory locations during execution of the code by the processor to form set data access indicators, wherein each set instruction access indicator is associated with a portion of the memory locations allocated for the code (Fig. 9, steps 900 – identify a request to access a memory location, 902 – performance indicator associated with the memory location; Fig. 15, element 1512 - memory location; [0123], Lines 8-11 – meta data take the form of performance indicators that tell processor data accesses to memory location; [0193]); and generating means for generating a presentation for coverage data, wherein the set data access indicators are identified in the presentation (Fig. 9; [0096], Lines 1-5 – a process for generating an interrupt in response to an access of a memory location associated with a performance indicator ...; [0097]).

13. **As to claim 21**, DeWitt discloses a computer program product in a computer readable medium for presenting coverage data relating to data access occurring during

execution of code, the computer program product comprising: first instructions for obtaining the coverage data containing data access indicators associated with memory locations (Fig. 4, element 404 – performance indicator shadow cache; [0081] – processor uses the performance indicators to determine how the related data access .. are to be counted); second instructions for identifying the data access indicators that have been set by a processor in the data processing system in response to access of the memory locations during execution of the code by the processor to form set data access indicators, wherein each set instruction access indicator is associated with a portion of the memory locations allocated for the code (Fig. 9, steps 900 – identify a request to access a memory location, 902 – performance indicator associated with the memory location; Fig. 15, element 1512 - memory location; [0123], Lines 8-11 – meta data take the form of performance indicators that tell processor ... data accesses to memory location; [0193]); and third instructions for generating a presentation for coverage data, wherein the set data access indicators are identified in the presentation (Fig. 9; [0096], Lines 1-5 – a process for generating an interrupt in response to an access of a memory location associated with a performance indicator ..; [0097]).

14. **As to claims 2** (incorporating the rejection in claim 1) **and 22** (incorporating the rejection in claim 21), DeWitt discloses the method and the computer program product further comprising: identifying unset data access indicators that have remained unset during execution of the code by the processor, wherein the unset data access indicators

are identified in the presentation (Fig. 12, element 1206 – send signal to performance monitor unit to disable counting of events; [0103]).

15. **As to claim 3** (incorporating the rejection in claim 2), DeWitt discloses the method, wherein the presentation is generated after the code has completed execution and further comprising: receiving new test parameters after generating the presentation; and in response to receiving the new test parameters, repeating the obtaining step, the identifying step, and the generating step (Fig. 14; [0016]-[0017]).

16. **As to claims 6** (incorporating the rejection in claim 2), **16** (incorporating the rejection in claim 12) **and 26** (incorporating the rejection in claim 22), DeWitt discloses the method, the data processing system and the computer program product, wherein the generating step includes: creating a call flow tree including an identification of accessed data areas ([0093], Lines 13-18 – the call flow support may ... record cache misses that may be missed by a functional unit trying to access instructions or data in a cache.).

17. **As to claims 7** (incorporating the rejection in claim 2) **and 18** (incorporating the rejection in claim 17), DeWitt discloses the method and the data processing system, wherein the generating step is performed in response to an event ([0093], Lines 13-18 – upon receiving this signal, the interrupt unit initiates appropriate call flow support....).

18. **As to claim 8** (incorporating the rejection in claim 7), DeWitt discloses the method, wherein the event is at least one of a completion of the execution of the code, expiration of a time, and the execution of a selected type of instruction in the code ([0069], Lines 19-22; [0076], Lines 1-6; [0083], Lines 7-14; [0152], Lines 11-14).

19. **As to claims 9** (incorporating the rejection in claim 1) **and 19** (incorporating the rejection in claim 11), DeWitt discloses the method and the data processing system, wherein the portion of the memory locations is a single memory location in the code and wherein every memory location in the memory locations is associated with a different data access indicator ([0072], Lines 1-9, 14-18; [0078]; [0080], Lines 4-6; [0083], Lines 7-14; [0086]; [0114]; [0138]; [0140], Lines 5-15).

20. **As to claims 10** (incorporating the rejection in claim 1) **and 20** (incorporating the rejection in claim 11), DeWitt discloses the method and the data processing system, wherein the portion of the memory locations includes at least one of a memory area or a single memory location ([0072], Lines 1-9, 14-18; [0078]; [0080], Lines 4-6; [0083], Lines 7-14; [0086]; [0114]; [0138]; [0140], Lines 5-15).

21. **As to claim 12** (incorporating the rejection in claim 11), DeWitt discloses the data processing system, wherein the identifying means is the first identifying means and further comprising: second identifying means for identifying unset data access indicators that have remained unset during execution of the code by the processor, wherein the

unset data access indicators are identified in the presentation (Fig. 12, element 1206 – send signal to performance monitor unit to disable counting of events; [0103]).

22. **As to claim 13** (incorporating the rejection in claim 12), DeWitt discloses the data processing system, wherein the presentation is generated after the code has completed execution and further comprising: receiving means for receiving new test parameters after generating the presentation; and repeating means, responsive to receiving the new test parameters, for repeating the obtaining means, the identifying means, and the generating means (Fig. 14; [0016]-[0017]).

23. **As to claim 17** (incorporating the rejection in claim 12), DeWitt discloses the data processing system, wherein the generating means is performed in response to an event ([0093], Lines 13-18 – upon receiving this signal, the interrupt unit initiates appropriate call flow support....).

24. **As to claim 23** (incorporating the rejection in claim 22), DeWitt discloses the computer program product, wherein the presentation is generated after the code has completed execution and further comprising: fifth instructions for receiving new test parameters after generating the presentation; and sixth instructions, responsive to receiving the new test parameters, for repeating the first instructions, the second instructions, and the third instructions (Fig. 14; [0016]-[0017]).

Claim Rejections – 35 USC § 103(a)

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claims 4-5, 14-15, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeWitt in view of Lewis et al. (Pub. No. US 2002/0157086 A1) (hereinafter 'Lewis')

27. **As to claims 4** (incorporating the rejection in claim 2), **14** (incorporating the rejection in claim 12) **and 24** (incorporating the rejection in claim 22), DeWitt does not explicitly disclose the method, the data processing system and the computer program product, wherein the set data access indicators are identified in the presentation using a first color and wherein the unset instruction access indicators are identified in the presentation using a second color.

However, in an analogous art of methods and systems for developing data flow programs, Lewis discloses the method, the data processing system and the computer program product, wherein the set data access indicators are identified in the presentation using a first color and wherein the unset instruction access indicators are identified in the presentation using a second color ([0130]).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Lewis into the DeWitt's system to further provide the method, the data processing system and the computer program product, wherein the set data access indicators are identified in the presentation using a first color and wherein the unset instruction access indicators are identified in the presentation using a second color.

The motivation is that it would enhance the DeWitt's system by taking, advancing and/or incorporating Lewis' system which provides a facility for programmers to more easily develop, visualize, debug, and optimize data flow programs and to convert existing control flow programs into data flow programs for execution on multiprocessor computer systems as once suggested by Lewis (i.e., [0024]).

28. **As to claims 5** (incorporating the rejection in claim 2), **15** (incorporating the rejection in claim 12) **and 25** (incorporating the rejection in claim 22), DeWitt does not explicitly disclose the method, the data processing system and the computer program product wherein the set data access indicators are identified in the presentation using a graphical indicator and wherein the unset instruction access indicators are identified in the presentation using the graphical indicator.

However, in an analogous art of methods and systems for developing data flow programs, Lewis discloses the method, the data processing system and the computer program product wherein the set data access indicators are identified in the presentation using a graphical indicator and wherein the unset instruction access

indicators are identified in the presentation using the graphical indicator (Fig. 27, steps 2704 – provide graphical representation of selected data, 2708 – highlight data affected by code segments; [0143]-[0144]).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Lewis into the DeWitt's system to further provide the method, the data processing system and the computer program product wherein the set data access indicators are identified in the presentation using a graphical indicator and wherein the unset instruction access indicators are identified in the presentation using the graphical indicator.

The motivation is that it would enhance the DeWitt's system by taking, advancing and/or incorporating Lewis' system which provides a facility for programmers to more easily develop, visualize, debug, and optimize data flow programs and to convert existing control flow programs into data flow programs for execution on multiprocessor computer systems as once suggested by Lewis (i.e., [0024]).

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Gover et al., *Method and System for Performance Monitoring Through Monitoring an Order of Processor Events During Execution in a Processing System* (Pat. No. 5,752,062)

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- Choquier et al., *System and Method Providing Virtual Applications Architecture* (Pat. No. US 6,961,681 B1)
- Burrige et al., *Method and Apparatus for Collocating Dynamically Loaded Program Files* (Pat. No. US 6,918,106 B1)
- Grumann et al., *Common Software Application Definition for Resource Management* (Pat. No. US 6,775,825 B1)
- R. A. Underwood, *Business Components Framework* (Pat. No. US 6,601,233 B1)
- O'Neil et al., *Method and Apparatus for Providing a Dynamic Service Composition Software Architecture* (Pat. No. US 6,256,771 B1)

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

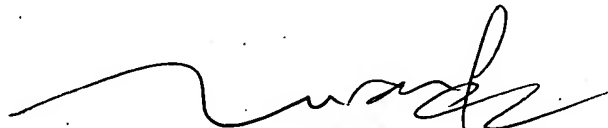
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BCW

pw



TUAN DAM
SUPERVISORY PATENT EXAMINER

April 10, 2007